soarability

Speedip® V2

UAV-based Smart Liquid Sampling System

Say Goodbye to Rope Tangling
Say Hello to Fully Autonomous Waypoint Mission

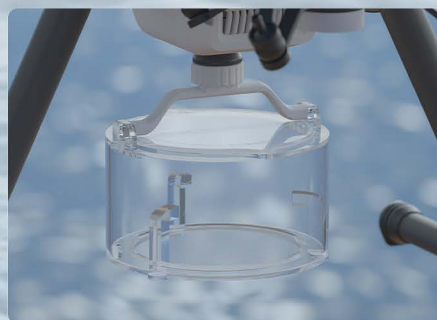Seamless Integration with DJI M350RTK/M300 RTK

Speedip V2

The seamlessly integrated system can collect liquid samples at designated locations and depths, revolutionizing liquid sampling operations and giving operators full confidence while enhancing personnel safety.

Fully Autonomous Waypoint Water Sampling Mission
Speedip V2 supports fully autonomous water sampling mission using DJI Pilot's Waypoint Function
Take-off -> Fly to target location -> Sample at designated depth -> Return and land
Making routine water sampling easier than never before

Rope Tangling Detection Mechanism
Automatically stops and warns the operator when the rope is about to tangle, minimizing the possibility of irreversible tangling

Grounding Detection
Avoids and notifies about invalid sampling

New Smart Motion Control Logic
Adjusts the container's movement speed based on the sampling stage, resulting in more representative liquid samples

Emergency Releasing Function
Cuts the rope to free up the UAV to minimize loss when the container gets trapped

Ultra-lightweight Design
540g
Main body weights only 540g, thanks to the use of magnesium alloy

2 x 1L Liquid Sampling Volume
2x1L
1L Stainless Steel & 1L PMMA container in standard package (quantity options available)
One container full of liquid is well within the payload limit

Built-in Downward Facing Camera
F/2.0
Starlight level performance, better situational awareness

Built-in High-resolution mm-wave Radar
1mm ultra-high resolution, accurately measuring water distance and container depth

Mounting & Dismounting within 10s
10s
When integrated with DJI M350 RTK/M300 RTK

API Available
API
Facilitating integration with diverse UAVs

With its elegant mechanical and electronic design, Speedip V2 is extraordinarily lightweight, maximizing UAV's payload capacity for carrying liquid samples. Two types of containers are available for different situations.
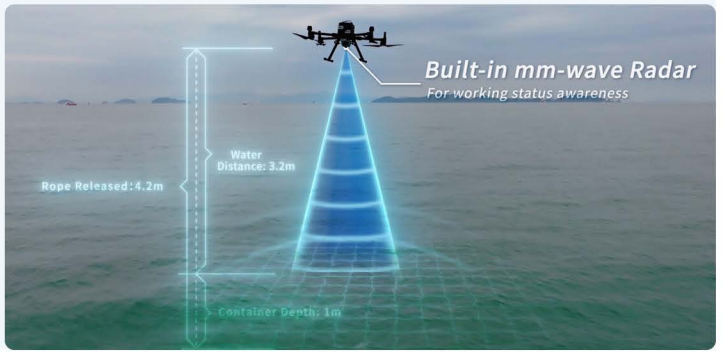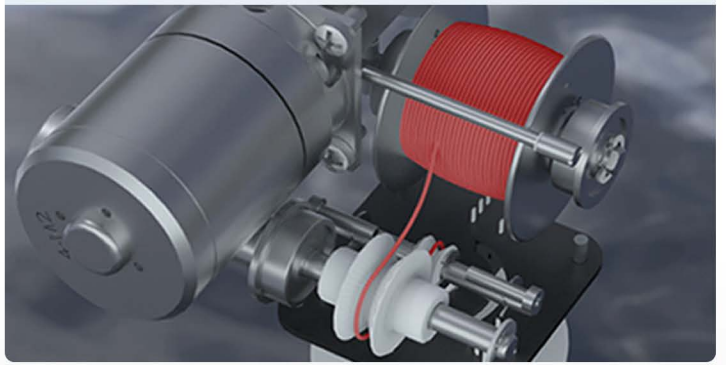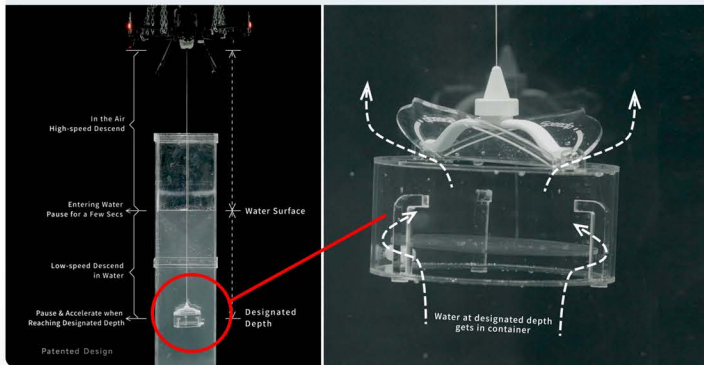
1L-PMMA
For **static liquids** & additional H20T Camera

1L-Stainless Steel
For **dynamic** or **corrosive liquids**

Speedip V2 has powerful environmental situational awareness, giving operators full confidence even during complex long-distance operations.

Built-in Starlight Camera

Built-in mm-wave Radar
For working status awareness
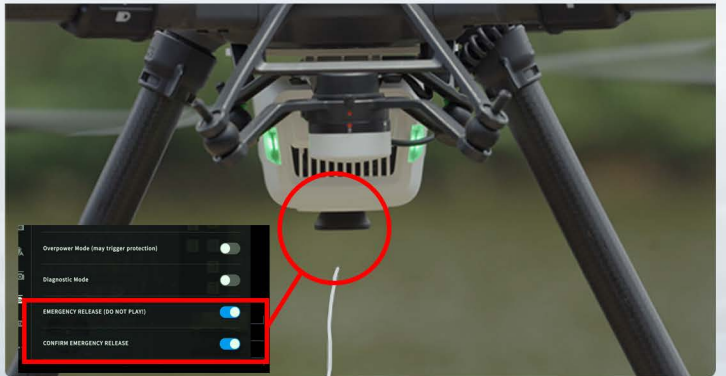Water Distance: 3.2m
Rope Released: 4.2m
Container Depth: 1m

The smart "Motion Control Logic" adjusts the container's movement speed based on the sampling stage, resulting in a much smoother sampling process, more precise depth control, and more representative liquid samples.

In the Air High-speed Descend
Entering Water Pause for a Few Secs
Water Surface
Low-speed Descend in Water
Pause & Accelerate when Reaching Designated Depth
Designated Depth
Patented Design
Water at designated depth gets in container

Speedip V2 is equipped with a unique rope tension and tangling detection mechanism that automatically stops and warns the operator when the container touches the ground or when the rope is about to tangle, minimizing the possibility of irreversible tangling.
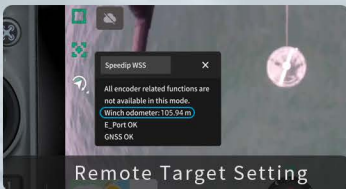

The optimized mechanical components also enhance the reliability and stability of the device.

Continuous Test
1315 Cycles

When the container is trapped, Speedip V2's emergency releasing function cuts the rope and brings the UAV back, so that loss can be minimized.

Overpower Mode (may trigger protection)
Diagnostic Mode
EMERGENCY RELEASE (DO NOT PLAY!)
CONFIRM EMERGENCY RELEASE

More Functionalities

Speedip WSS
All encoder related functions are not available in this mode.
Winch odometer:105.94 m
E_Port OK
GNSS OK
Remote Target Setting

Sampling Task Recording

Semi-coupled Connection

Speedip WSS
Current/target depth:(x)/x.4m
Current/Target Rope Length:
0.00/1.70m
Current/Target Speed:
0.00/9.00cm/s
Throttle/Current: 0%/0.02A
380.9 m
Winch Odometer

Typical Applications

Maritime Affairs
Water & Oil Leak Sampling at Sea

HAZMAT Response
Corrosive/Contaminative Liquids Sampling

Environmental Protection
Remote Water Sampling in Lakes and Rivers

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